

*WHAT WE CLAIMED IS:*

1. A dot-recording method using a dot-recording device for recording ink dots on a surface of a print medium, the dot-recording device including a dot-recording head having a plurality of dot-forming elements for ejecting ink droplets and a platen configured to extend in the main scanning direction and to be disposed opposite the dot-forming elements at least along part of a main scan path, the platen having a slot configured to extend in the main scanning direction, a width of the slot in the sub-scanning direction corresponding to a specific sub-scanning range on a surface of the dot recording head including at least part of the plurality of dot-forming elements, the dot-recording method comprises the steps of:

(A) setting an expanded area in accordance with a type of print medium to be used in the dot recording, the expanded area extending lengthwise beyond front and rear edges of the print medium including an external edge portion disposed in an area beyond the front or rear edge of the print medium, and representing a recording area in which images are to be recorded on the print medium;

(B) preparing print data for recording images in the expanded area;

(C) performing edge printing by ejecting ink droplets from at least some of the dot-forming elements disposed opposite the slot when images are printed at least in front- or rear-edge portions of the print medium on the basis of the print data; and

(D) selecting a specific print mode from among a plurality of available print modes,

wherein the step(B) comprises the step of,

(B1) preparing the print data including a data of dots of raster lines in the external edge portion in accordance with the selected print mode and the external edge portion.

2. A dot-recording method as defined in Claim 1, wherein the plurality of available print modes include print modes with mutually different sub-scan resolutions, the sub-scan resolution representing a recording density of raster lines in the sub-scanning direction; and wherein the step (B) comprises the step of:

(B2) setting a number of raster lines constituting the expanded area and a number of raster lines constituting the external edge portion included in the expanded area in accordance with the selected print mode.

3. A dot-recording control device for generating print data to be sent to a dot-recording unit for recording dots on a surface of a print medium with the aid of a dot-recording head provided with a plurality of dot-forming elements for ejecting ink droplets, wherein

the dot-recording unit is configured to drive the dot-recording head and/or the print medium to perform main scanning, to drive at least some of the dot-forming elements to form dots, and to cause the print medium to perform sub-scanning by being driven across the main scanning direction in between the main scans, and comprises a platen configured to extend in the main scanning direction and to be disposed opposite the dot-forming elements at least along part of a main scan path, and having a slot configured to extend in the main scanning direction, a width of the slot in the sub-scanning direction corresponding to a specific sub-scanning range on a surface of the dot recording head including at least part of the plurality of dot-forming elements, the dot-recording control device comprises

an image data generator configured to generate image data for the images recorded on the print medium;

an area size memory configured to store information about an expanded area in accordance with a type of print medium to be used in the dot recording, the expanded area extending lengthwise beyond front and rear edges of the print medium including an external edge portion disposed in an area beyond the front or rear edge of the print medium, and representing a recording area in which images are to be recorded on the print medium;

an input unit by which information about a selected type of print medium is entered; and

a print data generator configured to generate the print data representing images in the expanded area on the basis of information about the selected type of print medium, information about the expanded area, and the image data;

the dot-recording control device further comprising

a user interface unit configured to display a selection screen that allows a user to select one of a plurality of preinstalled print modes on a display, and that allows the selection be entered; wherein the area size memory comprises,

an expanded area memory containing, for each print mode, a number of raster lines constituting the expanded area; and wherein

the print data generator generates the print data including a data of dots of raster lines in the external edge portion for recording dots with which images can be formed in the expanded area on the basis of the selected print mode and the external edge portion, the number of raster lines stored in the expanded area memory, and the image data for the images to be recorded on the print medium.

4. A dot-recording control device as defined in Claim 3, wherein the plurality of available print modes include print modes with mutually different sub-scan resolutions, the sub-scan resolution representing a recording density of raster lines in the sub-scanning direction; and

the print data generator comprises a raster line number setter setting a number of raster lines constituting the expanded area and the number of raster lines constituting the external edge portion included in the expanded area in accordance with the selected print mode and the number of raster lines stored in the expanded area memory.

5. A dot-recording device for recording ink dots on a surface of a print medium with the aid of a dot-recording head provided with a plurality of dot-forming elements for ejecting ink droplets, the dot-recording device comprising:

a main scanning unit configured to drive the dot-recording head and/or the print medium to perform main scanning;

a head driver configured to drive at least some of the dot-forming elements to form dots during the main scanning;

a platen configured to extend in the main scanning direction and to be disposed opposite the dot-forming elements at least along part of a main scan path;

a sub-scanning unit configured to move the print medium to perform sub-scanning in between the main scans; and

a controller configured to control the dot-recording device, wherein the platen has a slot configured to extend in the main scanning direction, a width of the slot in the sub-

scanning direction corresponding to a specific sub-scanning range on a surface of the dot recording head including at least part of the plurality of dot-forming elements; and

the controller comprises

a print data memory configured to store a print data for recording images in an expanded area that extends lengthwise beyond front and rear edges of the print medium including an external edge portion disposed in an area beyond the front or rear edge of the print medium, the print data being selected in accordance with the required type of print medium; and

an edge printing unit configured to perform edge printing

by ejecting ink droplets from at least some of the dot-forming elements disposed opposite the slot when images are printed at least in front- or rear-edge portions of the print medium on the basis of the print data;

wherein the controller further comprises:

a print data memory for storing the print data including a data of dots of raster lines in the external edge portion in accordance with the specific print mode and the external edge portion.

6. A computer program product for recording ink dots on a surface of a print medium using a computer, the computer equipped with a dot-recording device for recording ink dots on a surface of a print medium with the aid of a dot-recording head provided with a plurality of dot-forming elements for ejecting ink droplets, wherein the dot-recording device comprises a platen configured to extend in the main scanning direction and to be disposed opposite the dot-forming elements at least along part of a main scan path, the platen being configured to have a slot configured to extend in the main scanning direction, a width of the slot in the sub-scanning direction corresponding to a specific sub-scanning range on a surface of the dot recording head including at least part of the plurality of dot-forming elements; the computer program product comprising:

a computer readable medium; and

a computer program stored on the computer readable medium, the computer program comprising:

a first program for causing the computer to prepare print data for recording images in a expanded area, the print data representing a recording area in which images are to be

recorded on the print medium, and being set in accordance with a type of print medium to be used in the dot recording, the expanded area extending lengthwise beyond front and rear edges of the print medium including an external edge portion disposed in an area beyond the front or rear edge of the print medium; and

a second program for causing the computer to eject ink droplets from at least some of the dot-forming elements disposed opposite the slot when images are printed at least in front- or rear-edge portions of the print medium on the basis of the print data;

wherein the first program comprises:

a user interface program which displays a selection screen that allows the user to select one of a plurality of preinstalled print modes on a display, and that allows the selection be entered; wherein the area size memory comprises, and

a print data generating program which generates the print data including a data of dots of raster lines in the external edge portion in accordance with the selected print mode and the external edge portion.

7. A computer program product as defined in Claim 6, wherein the user interface program displays the selection screen that allows the user to select one of the available print modes with mutually different sub-scan resolutions, the sub-scan resolution representing a recording density of raster lines in the sub-scanning direction; and

the print data generating program sets a number of raster lines constituting the expanded area and a number of raster lines constituting the external edge portion included in the expanded area in accordance with the selected print mode and the number of raster lines stored in the expanded area memory.